

**REMARKS**

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

**I. Amendment to the Specification**

In the specification, two paragraphs on page 4 have been amended to remove the recitations of claims 1-5 by way of this reply, thereby overcoming the objection for the informalities.

No new matter is introduced. They respectfully request the withdrawal of the objection.

**II. Status of the Claims**

No claim is requested to be canceled. Claim 1 is currently being amended.

Claims 8-10 are being added.

Basis for amending claim 1 can be found, for example, at the last paragraph in page 5 of the present specification. Basis for new claim 8 can be found, for example, at page 6 of the present specification. Basis for new claim 9 can be found, for example, at page 5 of the present specification.

A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-10 are now pending in this application.

**III. Claim Rejections under 35 U.S.C. §102(b)**

The PTO rejected claims 1-2 and 5-7 as allegedly being anticipated by Shimazawa (US 6,235,394). (Office Action, page 3) According to the PTO, Shimazawa disclosed a thermo-expansive microcapsule as presently claimed. The PTO further rejected claim 3 as allegedly being inherently anticipated by Shimazawa. (Office Action, page 4)

Applicants respectfully traverse the rejections, particularly in view of the amendment to claim 1.

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). MPEP 2131.

Shimazawa does not describe an invention identical to what are presently claimed for the following reasons.

First, the polymeric shell as recited in the present claims does not require a monomer reactive with carboxyl group which is required by Shimazawa. The PTO stated that Shimazawa discloses "monomer (III) (e.g., acrylamides, etc.)". (Office Action, page 3) The PTO seemed to consider the monomer (III), such as N-methyol acrylamide, described by Shimazawa as "acrylamide" and equated it with "a monomer having an amide group" recited in the present claim 1.

The monomer (III) described in Shimazawa is a monomer reactive with carboxyl group, e.g. monomer having reactive *hydroxyl* group or *epoxyl* group. See Shimazawa Col. 4, line 47 through Col. 5 line 6. However, the "monomer having an amide group" recited in the present claim 1 is not such a monomer reactive with carboxyl group, therefore is different from the monomer (III).

To clarify the difference, Applicants amended claim 1 by reciting “the monomer having an amide group is at least one selected from the group consisting of acryl amide, methacrylamide, N,N-dimethylacrylamide, and N,N-dimethylmethacrylamide.”

New independent claim 10 recites the phrase “consisting essentially of” instead of “containing”, thereby further excluding the monomer reactive with carboxyl group described in Shimazawa.

Second, Shimazawa does not describe the combination of the various components in the fashion as claimed, particularly not at the recited quantitative ratio. Shimazawa does not describe a genus of monomers having a cyclic structure in its side chain or a genus of monomers having an amide group. Rather Shimazawa describe a genus of monomers, monomer (V), which can produce polymer of high Tg and encompasses specific monomers having an amide group or having a cyclic side chain. See Shimazawa Col. 5, lines 6-24. One skilled in the art would understand that these two types monomers are not used concurrently in Shimazawa. The examples in Shimazawa confirm this understanding.

Further, Shimazawa does not teach or suggest to include a monomer having an amide group and a monomer having a cyclic structure in its side chain as essential components in the manner as claimed.

For the reasons set forth above, Shimazawa does not anticipate the present claim 1, particularly as amended; nor does it anticipate new claim 10. Because claim 1 is not anticipated, its dependent claims are not anticipated for the reason stated by the PTO. Accordingly, Applicants respectfully request the withdrawal of the rejection.

#### **IV. Claim Rejections under 35 U.S.C. §103 (a)**

The PTO rejected claims 3 and 4 as allegedly being obvious over Shimazawa. (Office Action, page 4) Applicants respectfully traverse, particularly with respect to the claims as amended.

The Supreme Court recently reaffirmed the Graham factors for determining obviousness in *KSR Int'l Co. v. Teleflex Inc.* (No. 04-1350) (U.S., April 30, 2007). The

Graham factors, as outlined by the Supreme Court in *Graham et al. v. John Deere Co. of Kansas City et al.*, 383 U.S. 1 (1966), are: 1) determining the scope and contents of the prior art; 2) ascertaining the differences between the claimed invention and the prior art; 3) resolving the level of ordinary skill in the pertinent art; and 4) evaluating evidence of secondary consideration. The Court recognized that a showing of “teaching, suggestion, or motivation” to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a). The Court noted that it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed, and specifically stated:

Often, it will be necessary . . . to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

*KSR Int'l Co. v. Teleflex Inc.*, slip op. at 14. As discussed below, the cited art cannot render the claimed invention obvious.

First, as discussed above, Shimazawa essentially includes the monomer reactive with carboxyl group. In contrast, monomer components constituting the polymeric shell in the present claims do not include the monomer reactive with carboxyl group. Indeed, the presently claimed invention avoids the inclusion of such monomers because it results in a defect. As discussed at page 2 of the present specification, due to the cross-linking of the monomer reactive with carboxyl group and the monomer having carboxyl group, the shell wall of the microcapsule has poor elasticity and brittleness like glass, therefore the microcapsule only has limited uses in Shimazawa. Please note that WO99/43758 is the international counterpart of US 6,235,394 to Shimazawa.

Secondly, the monomer components of claim 1 include a monomer having an amide group and a monomer having a cyclic structure in its side chain as recited, as essential components for improving the elasticity of expanded microcapsules in a wider temperature range and thereby improving the expanding performance of the microcapsules. Shimazawa

does not teach or suggest to include a monomer having an amide group and a monomer having a cyclic structure in its side chain so recited as essential components.

Shimazawa further fails to teach or suggest to have the combination of those four components at the recited quantitative ratio.

For the reasons above, one skilled in the art would not have been motivated to modify Shimazawa in arriving at the present claims.

Furthermore, the presently claimed invention provides results superior to Shimazawa. As discussed at pages 3-4 of the present specification, the microcapsules in the present claims have superior heat and solvent resistance and excellent expanding performance in broad temperature range in high temperature region. Applicants submit herewith a Rule 1.132 Declaration by Ms. Sachiko Tokumura to show the comparative study.

Applicants respectfully request the withdrawal of the rejection of claims 3 and 4. The pending claims, particularly as amended, would not have been obvious over Shimazawa.

**CONCLUSION**

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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